

Third West Weekly Report Shepherd, Michael

Joyce Ackerman, 'Craig Barnitz (cbamitz@utah.gov)' 07/20/2012 03:47 PM

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From: "Shepherd, Michael" < Michael. Shepherd@rockymountainpower.net>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbarnitz@utah.gov)" <cbarnitz@utah.gov>

6 Attachments











Weekly Reports 07-09 to 07-12-12.pdf Third West Weekly Log 2012-28.pdf 239873-1R.pdf 239991-1.pdf 239995-1.pdf

240072-1.pdf

Joyce & Craig,

Attached are the reports for the week of July 9, 2012.

All air monitoring results came back negative, except for a chrysotile hit on Monday last week.

Please let me know if you have any questions.

Thanks,

Mike Shepherd Project Manager Rocky Mountain Power - Major Projects 801.220.4584 Office 801.631.1310 Cell 801.220.2797 Fax michael.shepherd@pacificorp.com





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

DATE:	<u>0</u> 7/	09/12
Gene	ral	
		Health and Safety Inspection
NA		view and if necessary update Activity Hazard Analyses (AHA) based on planned site
<i>,</i> ,		ivities for the day
NA	Saf to c	ety Planning or "Tailgate" mandatory meeting for all employees and contractors prior commencement of any site work. Instruction, review hazards, health & safety issues lany modifications to the CSHASP
NA		e hazard and safety instruction for all first time employees, contractors or visitors
NA		mplete Employee Meeting Record Form B (where applicable)
NA		cument required Respirator Training completion with Form H
NA	Red	cord times and numbers of dump trucks and trailers as they leave the site with staminated material.
NA	Cor	nfirm return of waste material manifest documents for each load with site
	mai	nager.
NA Co	omplete a	all CSHASP Forms (for applicable activities planned for that day)
N.		Illness/Injury Report Form A
N.	A	Site-Specific Training Record Form C
N.	A	Hot Work Permit Form D
N	4	Trench/Evacuation Permit Form E
N	4	Combined Space Entry Permit From F
		Exclusion zone operations are practiced as instructed.
	NA	
	NA	
	NA	· · · · · · · · · · · · · · · · · · ·
Ø		air samples at cardinal compass points around exclusion zone. Check oughout the day to ensure proper operation.
	Ob	serve control measures for dust and fugitive materials i.e. watering excavation as and track out prevention.
	Re	view sign-in/sign-out log throughout and at the end of the workday.
\square		cure the site at the end of the workday
Samp	ling	

NA	Soil Confirmation sampling for any newly excavated areas
NA	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





V		Electronically file photo files into the on-site database
3		Complete Field Documentation
		Field Sample Data Sheets (FSDS)
	$\overline{\mathbf{A}}$	Logbook
	$\overline{\mathbf{A}}$	On-site computer database
abla	•	Label each sample media with a unique number
abla		Seal sample(s) in zip lock plastic bags
☑		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
☑		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
✓		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 07/09/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: _Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			X	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	;
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.	=		x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.		4	x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.		Dis .	х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	4
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	х			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a)	Bi-directional earth moving equipment shall have audible alarms.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

CVE line crew continued excavated for and placing ground grid in UTA yard. They applied water to dig sites and spoils that were placed on stockpile for removal.

CVE electricians excavated for control cables around 46 kV yard. They were instructed to apply water to these excavations and remove all spoils to the stockpile as well.

Weather was hot and sunny with light breezes and high temperatures around 100.



removal

determined necessary

NA



3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

			DAILY CHECKLIST
DATE	:	07/10	/12
Ge	<u>neral</u>		
		area H	ealth and Safety Inspection
NA			ew and if necessary update Activity Hazard Analyses (AHA) based on planned site
			ties for the day
NA		Safety to cor	y Planning or "Tailgate" mandatory meeting for all employees and contractors prior mmencement of any site work. Instruction, review hazards, health & safety issues ny modifications to the CSHASP
NA			azard and safety instruction for all first time employees, contractors or visitors
NA			plete Employee Meeting Record Form B (where applicable)
NA			ment required Respirator Training completion with Form H
NA		Reco	rd times and numbers of dump trucks and trailers as they leave the site with minated material.
NA		Confi	irin return of waste material manifest documents for each load with site
		mana	ger.
NA	Compl		CSHASP Forms (for applicable activities planned for that day)
	NA .		Illness/Injury Report Form A
	NA		* Site-Specific Training Record Form C
	NA		Hot Work Permit Form D
	NA		Trench/Evacuation Permit Form E
•	NA		Combined Space Entry Permit From F
			Exclusion zone operations are practiced as instructed.
		NA	Decontamination unit is working properly.
		NA	Workers are using decontamination unit as instructed.
		NA	Workers use personal protective equipment properly.
☑			ir samples at cardinal compass points around exclusion zone. Check
			ghout the day to ensure proper operation.
			rve control measures for dust and fligitive materials i.e. watering excavation
			and track out prevention.
\square			ew sign-in/sign-out log throughout and at the end of the workday.
☑		Secui	re the site at the end of the workday
Sa	mpling		
NA	Soil Co		nation sampling for any newly excavated areas
NA			onary Air Monitoring during contaminated soil removal around the perimeter of the sion zone
NA	\	Perso	onal Breathing Zone Monitoring on personnel conducting contaminated dust and soil

Digitally photograph each sample location and at any place field sampling personnel





$\overline{\mathbf{A}}$	Electronically file photo files into the on-site database	
\square	Complete Field Documentation	
[Field Sample Data Sheets (FSDS)	
	Logbook	
[On-site computer database	
	Label each sample media with a unique number	
abla	Seal sample(s) in zip lock plastic bags	
☑	Complete and include Chain of Custody (COC) Form required for shipping of samples appropriate laboratory	s to
I	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmen Samples	tal
✓	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees	
ý	Electronically file sample reports into on-site database	



Project: 3rd West Sub Station	Date: 07/10/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	9
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	9,
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	x			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.	1		х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.	r		x	,
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х	7		
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	х			,
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

CVE line crew continued excavated for and placing ground grid in UTA yard. A separate line cres worked on capacitor bank equipment and assembly.

 $\underline{CVE\ electricians\ continued\ trenching\ and\ working\ on\ control\ cables\ around\ 46\ kV\ yard.}$

Weather was hot and dry with temperatures around 100.





3RD WEST SUBSTATION REMEDIATION PROJECT HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

		DAILT CHECKLIST
DATE:	07/11	/12
~		
Gener	_	
		ealth and Safety Inspection
NA		w and if necessary update Activity Hazard Analyses (AHA) based on planned site
		ties for the day
NA		y Planning or "Tailgate" mandatory meeting for all employees and contractors prior
		mmencement of any site work. Instruction, review hazards, health & safety issues
		ny modifications to the CSHASP
NA		azard and safety instruction for all first time employees, contractors or visitors
NA		plete Employee Meeting Record Form B (where applicable)
NA		ment required Respirator Training completion with Form H
NA		rd times and numbers of dump trucks and trailers as they leave the site with
NA		minated material.
NA		rm return of waste material manifest documents for each load with site
NA Co	mana	-
NA CO	•	CSHASP Forms (for applicable activities planned for that day) Illness/Injury Report Form A
NA NA		Site-Specific Training Record Form C
NA NA		Hot Work Permit Form D
NA NA		Trench/Evacuation Permit Form E
NA NA		Combined Space Entry Permit From F
147	1	Exclusion zone operations are practiced as instructed.
÷	NA	Decontamination unit is working properly.
	NA NA	Workers are using decontamination unit as instructed.
	NA	Workers use personal protective equipment properly.
	1 42 %	workers use personal protective equipment property.
\square	Set a	ir samples at cardinal compass points around exclusion zone. Check
_		ghout the day to ensure proper operation.
		rve control measures for dust and fugitive materials i.e. watering excavation
		and track out prevention.
$\overline{\mathbf{Z}}$		ew sign-in/sign-out log throughout and at the end of the workday.
\square		re the site at the end of the workday
Samp	ling	

NA	Soil Confirmation sampling for any newly excavated areas
NA .	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





✓		Electronically file photo files into the on-site database
☑		Complete Field Documentation
		Field Sample Data Sheets (FSDS)
	$\overline{\checkmark}$	Logbook
		On-site computer database
abla		Label each sample media with a unique number
\checkmark		Seal sample(s) in zip lock plastic bags
☑		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
\checkmark		Review and disseminate sample results as received from the laboratories to Project
		Manager and other appropriate managers and employees
\checkmark		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>07/11/12</u>
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: <u>Justin Kargis</u>	Title:

] In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard 1926.59	Title Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	Date
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x	o .		
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.	*		x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	,
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	×
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			,
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x	٠		
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	-		х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

CVE line crew finished work on ground grid in UTA yard and covered trenches with clean fill and new yard rock. They also began work on replacing wire buss with hard buss in bay 1. A separate line crew worked on capacitor bank equipment and assembly.

CVE electricians continued trenching and working on control cables around 46 kV yard. Weather was hot and dry with temperatures around 100.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

			DAILT CHECKLIST
AT	E:	07/12	<u>/12</u>
_	eneral		
		area H	ealth and Safety Inspection
	A WOIK		w and if necessary update Activity Hazard Analyses (AHA) based on planned site
	12 %		ties for the day
N	A	Safety to cor	Planning or "Tailgate" mandatory meeting for all employees and contractors prior mmencement of any site work. Instruction, review hazards, health & safety issues my modifications to the CSHASP
N	A	Site h	azard and safety instruction for all first time employees, contractors or visitors
N	Α	Comp	plete Employee Meeting Record Form B (where applicable)
N	A	Docu	ment required Respirator Training completion with Form H
IA ⁻			d times and numbers of dump trucks and trailers as they leave the site with minated material.
ΙA		Confi	rm return of waste material manifest documents for each load with site
		mana	ger.
ΙA	Comp	lete all	CSHASP Forms (for applicable activities planned for that day)
	NA		Illness/Injury Report Form A
	NA		Site-Specific Training Record Form C
	NA ·		Hot Work Permit Form D
	NA		Trench/Evacuation Permit Form E
	NA		Combined Space Entry Permit From F
			Exclusion zone operations are practiced as instructed.
		NA	Decontamination unit is working properly.
		NA	Workers are using decontamination unit as instructed.
		NA	Workers use personal protective equipment properly.
v	1		r samples at cardinal compass points around exclusion zone. Check
			ghout the day to ensure proper operation. rve control measures for dust and fugitive materials i.e. watering excavation
			and track out prevention.
V	71		ew sign-in/sign-out log throughout and at the end of the workday.
V			re the site at the end of the workday
<u>s</u>	ampling	Z	
١A	Soil C	Confirm	ation sampling for any newly excavated areas
JA		Static	anary Air Monitoring during contaminated soil removal around the perimeter of the

NA	Soil Confirmation sampling for any newly excavated areas
NA	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





V	Electronically file photo files into the on-site database
V	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
	Logbook
	On-site computer database
\checkmark	Label each sample media with a unique number
\checkmark	Seal sample(s) in zip lock plastic bags
☑	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Ø	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
	Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>07/12/12</u>
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: _Justin Kargis	Title:

Standard	Title	☐ In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	A.
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.	2		x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Aetion Taken and
Standard	Title			D,	Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.	·		x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			·
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	x			
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	X			

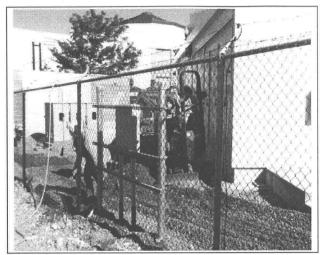
Standard	Title	[] In Compliance	Cout of Compliance	□ N/A	Corrective Action Taken and Date
1926. 4 51 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	Š		x	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

CVE line crew continued working on replacing wire buss with hard buss in bay 1. Line crew departed for the day around 2 pm.

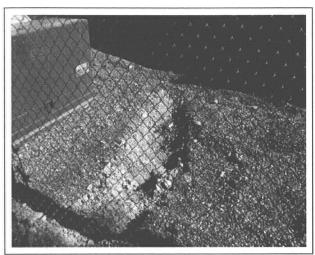
CVE electricians continued trenching and working on control cables around 46 kV yard.

RMP relay technicians have been on site throughout the week.

Weather was hot and dry with temperatures around 100.



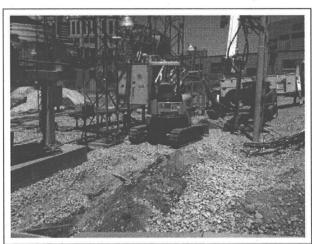
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY: SCALE:		REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 07/09/12	FILE:	

SITE PHOTOGRAPHS



3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah



РНОТО 1

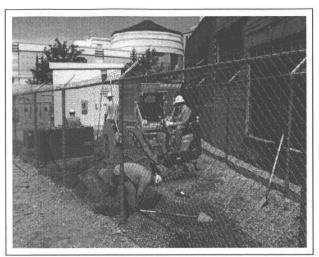
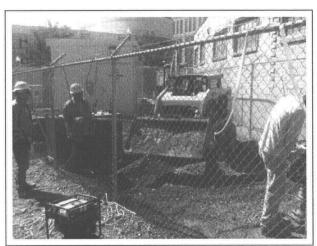


PHOTO 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

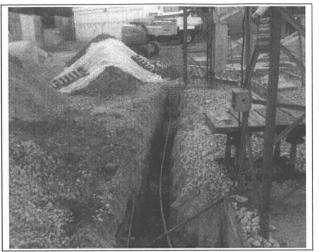
PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR		
DRAWN BY: JMK	DATE 07/10/12	FILE:		

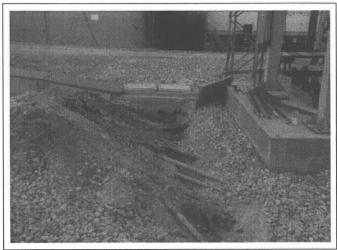
SITE PHOTOGRAPHS



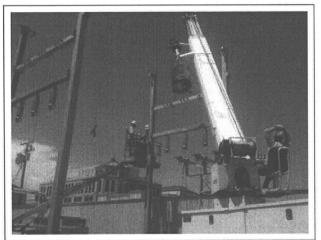
3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah



РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR		
DRAWN BY: JMK	DATE 07/11/12	FILE:		

SITE PHOTOGRAPHS



3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah

PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild DATE: Monday, July 9, 2012 PROJECT NAME: MAIN CONTRACTOR: Cache Valley Electric 3000078050 / 10035803 PO & Work Order NO.: Crew Start Time: Crew Stop Time: 17:10 Tot Hrs mns: 10:15 17:15 FCR Start Time: FCR Stop Time: Tot Hrs mns: 10:30 Use military time format 00:00 Sunny - 77 degrees in AM, 100 degrees in PM **WEATHER CONDITIONS:** DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE Line Crew is working on completing the grounding in the UTA yard and on erecting the capacitor banks. Got the two capacitors stacked and will be piping them in on Tuesday. Still working on the UTA ground grid. CVE Fab Crew is not on site today. CVE Electrician Crew arrived around 10:00. They worked on conduit trenches for the yard lighting. Newman is not on site today CVE Line Crew = 6, CVE Fab Crew = 0, CVE Electrical Crew = 3, Newman = 0, R&R = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Bob Gentry - 0645 Dispatcher logout name and time: Al Swinski - 1720 **DISCREPANCIES:** IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer, Pickup, JLG (1), tool trailer Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe. OSHA Recordable Safety Incidents: Reported by: Time:

Rocky Mountain Power

Russ Johnson

Field Construction Representative

A division of PacifiCorp

PACIFICORP OPERATIONS - Field Construction Representative Dally Log PROJECT NAME: Third West Sub - Rebuild DATE: Tuesday, July 10, 2012 PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Start Time: 6:55 Crew Stop Time: Tot Hrs mns: 6:55 17:15 FCR Start Time: FCR Stop Time: Tot Hrs mns: Use military time format 00:00 WEATHER CONDITIONS: Sunny - 73 degrees in AM, 102 degrees in PM DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. Kevin Freestone dropped by the sub around 4:30 for a quick visit. Scott Collard came by to discuss punch list items. CVE Line Crew completed the ground grid work in the UTA yard. They now need to place the yard finish rock. They continued erecting the capacitor banks and should finish the bus work on Wednesday. CVE Fab Crew is not on site today. CVE Electrician is working with the line crew piping the capacitors. Newman is not on site today. CVE Line Crew = 7. CVE Fab Crew = 0. CVE Electrical Crew = 1, Newman = 0, R&R = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Jim Bowman - 00654 Dispatcher logout, name and time: Gus Montanez - 17:15 **DISCREPANCIES:** IMMEDIATE CORRECTIVE ACTION TAKEN: 7/10/12 - Identified conflict on bus size for jumpers from the 12 kV capacitor cables to the Roger Fuerst confimed that we should install 336 AAC, not the 4/0 called for on the BOM **DELAYS OR LOST TIME ENCOUNTERED:** EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer, Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.

Rocky Mountain Power

OSHA Recordable Safety Incidents:

Russ Johnson

Field Construction Representative

Reported by:

Time:

A division of PacifiCorp

PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild Wednesday, July 11, 2012 DATE: PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Stop Time: 6:55 Crew Start Time: 17:10 Tot Hrs mns: FCR Stop Time: 16:15 FCR Start Time: 6:39 Tot Hrs mns: Use military time format 00:00 Sunny - 79 degrees in AM, 103 degrees in PM **WEATHER CONDITIONS:** DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE Line Crew completed the ground grid work in the UTA yard and placed yard finish rock in same. They completed the install of the capacitor banks with the exception of the jumper from the cap banks to the terminators, which are yet to be installed. After lunch, the line crew started wrecking out the 12 kV bus from Xfmr #1 to the switchgear and swapped out the beams, top to bottom, for the new bus configuration. CVE Fab Crew is not on site today. CVE Electrician worked with the line crew piping the capacitors and then began excavating for the yard lights along the west wall and for the conduit run from the wall to the cable trench. Newman is not on site today . CVE Line Crew = 7, CVE Fab Crew = 0, CVE Electrical Crew = 1, Newman = 0, R&R = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Manny LuHaun - 0639 Dispatcher logout, name and time: 1 left early and contractor didn't call in DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: **DELAYS OR LOST TIME ENCOUNTERED:**

EQUIPMENT (working, delivered, idle):

CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer, Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:

Rocky Mountain Power

Russ Johnson

Field Construction Representative

A division of PacifiCorp

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

Crew Start Time: 6:55	PROJECT NAME:	Third West Sub - Rebuild		DATE: Thursday, July 12, 2012						
FCR Start Time: FCR Start Time: 16:35 Tot Hrs mns: 9:52	PO & Work Order NO. :	3000078050 / 10035803		MAIN CONTRACTOR	: Cache Valle	Valley Electric				
Semilitary time format 00:00	Crew Start Time:	6:55	Crew Stop Time:	16:30	Tot Hrs mns:	9:35				
Semilitary time format 00:00	FCR Start Time:	6:43	FCR Stop Time:	16:35	Tot Hrs mns:	9:52				
WEATHER CONDITIONS: Sunny - 80 degrees in AM, degrees in PM DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE Line Crew is working on the 12 kV bus mods between Xfm #1 and the switchgear. It is necessary to redrill the holes for mounting the insulators to allow for the angle between the two bus structures and to get the bus supports to line up. CVE was able to reuse the jumpers to both the Xfm and the switchgear. They had to press new tenninals on end only. They completed the install of the 12 kV bus with the exception of the bird guard. CVE Fab Crew is not on site today. CVE Electrician pulled wiring for the yard lights and installed conduits for same. Newman is not on site today but will return on Monday and start hauling the material to Clean Harbors. CVE Line Crew = 7. CVE Fab Crew = 0, CVE Electrical Crew = 1, Newman = 0, R&R = 1. IF WORKING IN ENERGIZED SUBSTATION: Despatcher logoru, name and time: Gus Montanez - 1633 DISSCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idile): CVE Line Crew. Portable toilet (2), forkirt, 1 dumpster, office trailer, conex. exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobbat, min-ex., water truck, compactor, backhoe.										
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DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.	Dispatcher logout, name and ti									
EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.	DISCREPANCIES:			IMMEDIATE CORRECTIVE ACTION TAKEN:						
EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.										
EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.					 					
EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.										
EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.										
EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer, Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.			<u>-</u> -							
EQUIPMENT (working, delivered, idle): CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.										
CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.	DELAYS OR LOST TIME ENCOUNTERED:									
CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.					<u>-</u>					
CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.										
CVE Line Crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer. Pickup, JLG (1), tool trailer. Newman: trachoe (1), bobcat, mini-ex, water truck, compactor, backhoe.				•						
trachoe (1), bobcat, mini-ex , water truck, compactor, backhoe.	EQUIPMENT (working, delivered, idle):									
OSHA Recordable Safety Incidents: Reported by: Time:	,		•	e conex (2), tool trailer, Pickup,	JLG (1), tool trailer.	Newman:				
OSHA Recordable Safety Incidents: Reported by: Time:										
	OSHA Recordable Safety	Incidents:		Reported	i by:	Time:				

Rocky Mountain Power

Russ Johnson

Field Construction Representative

A division of PacifiCdrp



July 16, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 239873-1R None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 239873-1R is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 239873-1R

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

July 11, 2012

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 11, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Nu	ımber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration ,	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-070912 E	ЕМ	891601	0.1000	812	1	0.0047	0.0047	10.0
3W-070912 N	EM	891602	0.1000	812	ND	0.0047	BAS	BAS
3W-070912 W	EM	891603	0.1000	814	ND	0.0047	BAS	BAS
3W-070912 S	EM	891604	0.1000	815	ND	0.0047	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 239873-1R

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

July 11, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 11, 2012

Client ID Number	Lab ID Ni	umber	Asbestos Mineral	Asi	Asbestos Structure Types*				**Excluded Structures	Asbestos Structures for	
			-	Fibers	Bundles	Clusters	Matrices			Concentration	
3W-070912 E	EM	891601	Chrysotile	1	0	0	0	0	0	1	
3W-070912 N	EM	89160 2	ND	0	0	0	0	0	0	0	
3W-070912 W	EM	89160 3	ND.	0	. 0	0	0	0	0	0	
3W-070912 S	EM	891604	ND	0	0	0	0	0	0	0	

^{*}See Analytical Procedure for definitions

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to i ncorrect as pect ratio

ND = None Detected

Due Date: 7.12.17 Due Time: 925

8801 (cean St. Denver, CO 80216 - Phr. 303 964-1886 - Fax 303 477-4275 - Toll Free :866 RE81-ENY Pagar : 303-509-2008

·	INVOICE TO: (IF	F DIF	FER	ENT)											CC	NTAC	T IN	FOR	MAT	ION:			
Company: REL Eurisenmental	Company						Contact Pave Rossellay											Contact					
Address:	Address:	Address:					Pho to:										Phone:						
						Fax:										Fax:							
							elt/pag		301	54	il-	W	<u>35</u>					Cellyp	agar;				
Project Obscription/Location: U7 W 9005 #2						F		dav		-		-		(D)	^								
ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm		7				REQL	JES	TED	AN	ALY	SIS		=		==		VAI	JO N	MATR	IX CC	DDES		AB NOTES:
PLM / PCM (TEM) RUSH (Same Day) K PRIORITY (Next		†	7	\top	丁		T	TT	T	Ħ		1	1	İΤ			Air≂				lulk = B	 -	
(Rush PCM = 2hr, TEM = 6hr.	.)	1	1	1		1	1	11				1		1)ust =	0	I	P	aint = P		
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm]	1			11	1	11				1					Soil =	s		W	ipe = W		
Motal(s) / Dust RUSH 24 hr 3-5 Da	y ™Prior notification is	}	볉		1	11		11				}				Sv	vat _i =	SW		F	= Food		
RCRA 8 / Metals & Welding RUSH 5 day 10 day	required for RUSH	를	Quant		1	1 8				8	1			٤,		Drinkln	g Wa				Water = WW	 	
Fulle Scall / ICLF	tumarounds.**	Point Goamt	÷ ad		. {	Metals Goa				1	- 1	1		NOTES		****				= Other proved wipe media only**		ļ	
Organics 24 hr 3 day S Day	S	12	S 20	i	1	ෂ				3	- },	<u> </u>		LES X		"ASI	MEI	/92 a	pprovec	1 w/be	media only**	}	
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - E.coli 0157:H7, Coliforms, S.aureus24 hr2 D		4 %	2, 28		1	1 (į	8	§		ē	8			}	1					
E.coli O157:H7, Coliforms, S.aureus 24 hr. 2 D Salmonolla, Lieteria, E.coll, APC, Y a H 48 Hr. 3-5	S Day	1 5	7402, SO-Ind	OSHA	٩	1 12	}	1	-	+		O Gard		a 0			1				}		
	ir_ 48 Hr . 3 Day S Day	Long report	F 2	l co	Respirable	- Analyte(s) TCLP, Welding Fume,	`	1	‡	벌	3° 1	- 1 -	3	9 0							Ì	 	
**Turnaround times astabilah a laboratory priority, aubject to laboratory volume				7400B.	See) § §	E	\	<u> </u>	8	١,	ة ة	8	\$ 3		· 6	1				1	<u> </u>	
apply for atterhours, weekends and holidays		Įĝ	\$ ₹	₹		Analyte(s)	1 5	أنق	5 ≯	1	زاد	* 7	🛊	. E		Volume	اه	اور					
Special Instructions:		Short report,	AHERA, Jant, Mic	7400A	Total			Samonella:	steria: +/-	3	3	S.aureus	Σ	Meld: +/., Mentification.		> s	Sog	Containers		1	}	EM Nu	mber (Laboraio
		1	1 8		1 -	METALS RCRA 8,	N. S.	8		ğ	8 () ui ()	5 8	200	흵를	I	Sample (L) / Are	Ě	Š	Dat		Time		Use Only)
Client sample ID number (Sample IO's must be ur	nique)	12	Semi	S.	OUST	F S	8			CRO	Bloi		_	SAS		Samp (c.)//	Matrix	#	Collat rem/de		Collected nh/mm a/p		
1 3m 070912 E		_	×		T		T	П	T		1		П	Т		812	A		7/04	12		930	1601
2 3w 070912 N				T					7	П	7	7	П			812			\overline{I}				2
3 3W-070912 W		T	П	T							\neg			T		814			1				3
4 3w-0709125		Τ	J				1.	П		П	7			7		815			1		41.		4
5		1		7						П	7				_								
6		1					1		7		\top	1	\prod	_									
7								11	T	П		T	\sqcap	\top				1					·
8		1		1							7	1		1				7	-			:	
9							1	\sqcap	7		1	T	\sqcap	7			П						
10								1.1	1		1	1	\Box	\top			П	1	٠.				
	Iditional samples shall be listed on	atta	ched lo	ong ic	orm.))		JL_							4				 -				
NOTE: REI will analyze incoming samples based upon httprmation received and will no																	agrer	s that	eubmis	skm of f	the following san	nples for re	Quesied
analysis as indicated on this Chain of Custolly 1998 consistes an analysical services ag		/a, (B.0)	are to co	mpiy v	Min pa	yment u	7	nay re:	SUIT IN	a 1.5	76 m	onuniy	inus	st sur	charge								
Relinquished By: Wy	Fed Ex				e/Tin		109	1112								Sar	n pl e (Cond	lition:	. 0	n Ice S	ealed	Joset.
Laboratory Use Only	Date/Time: 7	11.	12		~	Carrie	<u></u>		1	·	ا	F	<u>\</u>			Ter	np. (F	·°) _		_ Ye	es/No Ye	s/No	Y0 100
Received By: Results: Contact Dave Enone Email Fax Date	te 7/1(Time X1 SPIniti			ontact	t t	Carrie		Pho	<u> </u>				=			Dale '	-	220	 	Time	SOF	——initis	
Conlact Phone Email Fax Dat			7	ontact				Pho	~~			_	_			Date			-	Time		Initia	
													_				$\overline{}$			~~	16 -		

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

As bestos Type A = Amosite An = Anthophyllite Structure Types F = Fiber B = Bundle

C = Chrysotile Cr = Crocidolite T = Tremolite C = Cluster M = Matrix

inonic

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

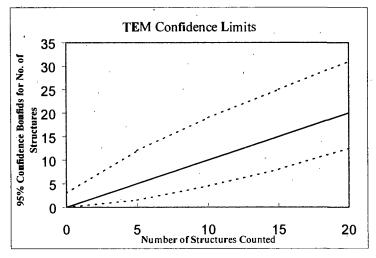
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, tnc. TEM Astrestos Structure Count

Laboratory name:	Resn/oirs Environmental, Inc.
Instrument	JEOL 100 CX (N)
Voltage (KV)	100 KV
Magmification	20KX iOKX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Fifter Area (mm2)	
QA Type	

Client :	12+P
Sample Type (A=Alr, D=Dust):	A
Air yolume (L) or dust area (cm2)	8/2
Oate received by lab	7/11/12
Lab Job Number:	239873
Lab Sample Number:	891601

Analyzed by	-M
Analysis date	7/11/12
Melhod (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, ANERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Fraction of primary filter used	Tiny).
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = ye	s, blahk	= no
Ond	Grid Opening	Туре	Primary	Total	Length	Width		Amphibole	L c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H33	M								·				
	43-3	M			g	es A	50%	whach 5	3 Le	b>~				
	F3-3	W												
	€33	NO												
	23-4	M												
B	45-1	M												
	95-1	F			2	l	w		_		/			·
	FSI	M												
	FIN	M			Pm	er 1	3~H							
	86 M	W												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: ID=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	12+P
Sample Tvpe (A=Air, D≃Dust):	A
Air volume (L) or dust area (cm2)	8 2
Oate received by lab	7/11/12_
Lab Job Number:	239873
Lab Sample Number:	891602

Analyzed by	W
Analysis date	7/11/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting mles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (mi)					

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class	· · · · · · ·			1 = yes, blank = no		= no
Ond	Ond Opening	Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F1-3	M												:
	EN-3	W			Pner	A 50	O ruf	v 52.	deb	, <u>,</u>				
	64-3	M											·	
	P41	MO			ρ	rex	BNA							
	EM-1	M			V									
B	1-3-3	M												
	63.3	M												
	c3-3	M						,						
	(34	M												
	B3~1	M												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S)
Voltage (KV)	100 KV
Magnificabon	20KX 10KX
Grld opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

	tare event
Client :	2+P
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	814
Date received by tab	7/11/12
Lab Job Numben	239873
Lab Sample Numben	591603

Lab Sample Numben	891603
F-Factor Calculation (Indirect Preps	Only):
Fraction of printary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Analyzed by	111
Analysis date	7/11/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = yes, blank = no		
	Gilla Opoliulia	Туре	Primary	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	12-3	MO												
	H2-3	NO				lng	A 500	Mud-5	1/3 d	boko				
	H3-1	M]	·							
	631	ND				Pner	B~6	% intec	457	de	bry			
	52-6	M												
B	43-4	MO			·						·			
	63-4	M							,					
	F34	M)												
	53M	MO												
	23-3	M												.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count.

Laboratory name:	Resryoirs Environmental, Inc.
Instrument	JEOL 100 CX (N)
Vottage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0,28 um
Scale: ID =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

12117700000000000	turo courre.
Client:	12+P
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	815
Date received by lab	7/11/12
Lab Job Number:	2 39873
Lab Sample Number:	891604

Analyzed by	1K
Analysis date	7/11/12
Melhod (D=Direct, l=Indirect, IA=Indirect, ashed)	0
Counting mles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = ye	es, blank	≖ no
O.1.4	Ond Opening	Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F2-3	M												
	82.3	M			Pn	e A	- 50%	intact 3	2	ebr	£3			
	C2-3	M												
	1323	M			R	9 (A							
	A3-4	MD			/									
3	826	M												
	as	m.												
	B26	B												
	A2-16	M						-						
	A3-4	NO												

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, $s/cc = \frac{\# \text{ Asbestos Suructures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



July 13, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 239991-1 None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer.

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 239991-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 10189e-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 239991-1

Client:

Client Project Number / P.O.:

R & R Environmental None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

July 12, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 13, 2012

Client	Lab	Lab		Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Number		Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-071012 E	EM	891912	0.0800	979	ND	0.0049	BAS	BAS
3W-071012 N	EM	891913	0.0800	979	ND	0.0049	BAS	BAS
3W-071012 W	EM	891914	0.0800	979	ND	0.0049	BAS	BAS
3W-071012 S	EM	891915	0.0800	977	. ND	0.0049	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity
Average Grid Opening in mm² = 0.010

Effective Filter Area = 385 sq mm

P. 303-984-1966

5601 Logan Street Suite 100 Denver, CQ 60216

1-866-RE SI-ENV wwnv.railab com Due Date: 7:13:12

Due Time: 830

RESERVOIRS Environmental, Inc. 5801 Logan St. Denver, CO 60216 • Ph. 383 984-1666 • Fax 303 47T-4275 • Toll Free :865 RESI-ENV

Pager: 303-509-2098

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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

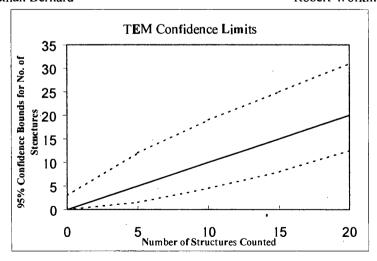
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.0 56 um
Primary lilter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Samole Tvoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	979
Oate received by lab	7/12/12
Lab Job Number:	239991
Lab Sample Number:	891912

Analyzed by	JB_
Analysis date	7/12/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	70
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Grid Opening		No. of Structures		Dimensions		Identification	Mineral Class			•	1 = ye	es, blank	= no
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	F5-3	MD												
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Reservoirs Environmental, Inc. TEM Asbestos Structure Count

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	Resrvoirs Environmental,
Laboratory name:	Inc.
i	
Instrument	JEOL 100 CX (N) (S)
	. •
Voltage (KV)	100 KV
į	
Magnification	20KX) 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
0-4-45	0.000
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area	
(mm2)	
	,
QA Tyoe	

ture Count
R+R
A
979
7/12/12
239991
891913

F-Facfor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Votuma Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	7/12/12
Method (D=Direct, I=Indirect, IA=indirect, ashed)	7
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grld	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class			,	1 = ye	es, blank	= no
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	F5-6	M					·							

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Reservoirs Environmental, tnc. TEM Astrestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N)
Voltage (KV)	100 KV
Magnification	20ICV 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

124 Astresios Structure Count							
Client:	R+R						
Sample Type (A=Air, D=Dust):	A						
Air volume (L) or dust area (cm2)	979						
Oate received by lab	7/12/12						
Lab Job Number:	239991						
Lab Sample Number:	891914						

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (mf)					

Analyzed by	JB
Analysis date	7/12/12
Method (D=Direcf, l=Indirect, IA=Indirect, ashed)	7
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = yes, blank = no		
	Jone Opening	Туре	Primary	Total	Length	Width		Amphibole	C ·	NAM	Sketch/tComments	Sketch	Photo	EDS
A	K4-1	ND				740	Agri	-602	tal	n.f	5/o debu	5		
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B	F2-6	D												
	62-6	M)				·								
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Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S)
Voltage (KV)	100 KV
Magnification	20KX i0KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

12	
Client :	RHR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	977
Date received by lab	7/12/12
Lab Job Number:	239991
Lab Sample Number:	891915
	

Analyzed by	JB
Analysis date	7/12/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	70
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed
	-

F-Factor Calculation (Indirect Preps	Onty):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class				1 = V	es, blank	= no
Ond	Cha Opening	Туре	Primaty	Total	Length	Width	146 Hamodalon	Amphibole	_ c	NAM	Sketch/Comments	Sketch	Photo	EDS
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	E3-1	M					. 7							
	E3-3	M												
		·												

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the sampies, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confinnation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{A verage GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



July 13, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 239995-1 None Given

Project Description:

3rd West Sub

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 239995-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely.

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 239995-1

Client:

R & R Environmental

Client Project Number / P.O.: Client Project Description:

None Given

Date Samples Received:

3rd West Sub July 12, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 13, 2012

Client	Lab -		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID Nu	ID Number		Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-071112 E	EM	891916	0.0800	984	ND	0.0049	BAS	BAS	
3W-071112 N	EM	891917	0.0800	984	ND	0.0049	BAS	BAS	
3W-071112 W	· EM	891918	0.0800	984	ND	0.0049	BAS	BAS	
3W-071112 S	EM	891919	0.0800	986	NO	0.0049	BAS	BAS	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Effective Filter Area = 385 sq mm

DATA QA

7737 UEBL BOUL

Due Date: 7.13.12 Due Time: 83co.__

REILAB RESERVOIRS ENVIRONMENTAL, INC. S00 I Lagan St. Denver, CO 80216 · Ph: 303 904-1986 · Fax 303-477-4275 · Toll Free :866 RESI-ENV

Pagar: 303-609-2098

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NOTE: R	Ei will analyza incoming sam	ples based upon informal	ion received and will not be re in analytical services agreeme	sponsible for error	s or omissions in o	cakula	lions rSst	ulting fo	om the i	naocur	acy of o	original	data.B	y signi:	no cliant	oompany re	presentativ	ve agre	es that	t submis	ısion of t	he following sar	mplas for I	equested
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Results:	Contact	Phone Email	Fax Date	Time	Ini	tials	Co	ntact			Pl		Bprail				Date				Time	<u> </u>	Inil	ials
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A =	Amosite	F =	Fiber
An =	Anthophyllite	B =	Bundle
C =	Chrysotile	C =	Cluster
Cr =	Crocidolite	M =	Matrix
T =	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

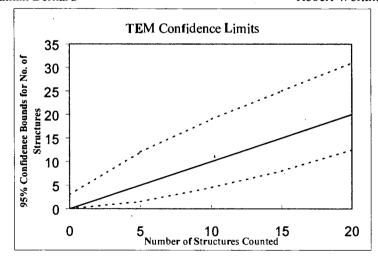
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Astrestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S)
Voltage (KV)	100 KV
Magnification	20KX i0KX
Grid openina area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+0
Samole Type (A=Air, D=Dust):	TA
Air volume (L) or dust area (cm2)	984
Date received by lab	7/11/12
Lab Job Number:	2>9995
Lab Sample Number:	891916

Analyzed by	ヹ
Analysis date	7/13/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	1)
Counting mles (ISO, AHERA, ASTM)	A(t
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	No. of Structures		Dimensions		Mineral Class				1 = yes, biank = no		
- Ond	Ond Opening	Туре	Primary	Total	Lenoth	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
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	14-1	NT			·			- //	//					
	E4-3	MD												
	C43	M												<u>. </u>

Month Analyzed

Date Analyzed

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filler area (mm2)	385
Secondary Filter Area (mm2)	
QA Tvoe	

Client:	R+R
Sample Type (A=Air; D=Dust):	A
Air volume (L) or dust area (cm2)	984
Date received by lab	7/2/12
Lab Job Number:	239995
Lab Sample Number:	891917

Method (D=Direct, Islandirect, IA=Indirect,
Counting rules (ISO, AHERA, ASTM)
Grid storage location
Scope Alignment

Analyzed by
Analysis date

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter usad	, _
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

	Grid	Grid Opening	Structure	No. of Str	uctures	Oime	nsions	Identification	Mineral Class			·	1 = ve	s, blank	= no
l	Gila	Grid Opening	Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
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	B	(96	M						//.						
		Flo-1	1D												
		F6-1	M												
		C6-1	M												

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Reservoirs	Environmenta	I, Inc
TEM Asbes	tos Structure (Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 10 =	0.056 um
Primary filter area (mm2)	385
Secondary Filler Area (mm2)	
QA Type	·

tale Coa	<u> </u>
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1	1
9	84
7/12	12
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891	918
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Analyzed by	邓
Analysis date	7/13/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	T)
Counting rules (ISO, AHERA, ASTM)	Alt
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preos Only):								
Fraction of primary filter used								
Total Resuspension Volume (ml)								
Voluma Applied to secondary filtar (ml)								

Grid	Grid Opening	Structure	No. of St	ructures	Dimensions		Dimensions		Dimensions		Dimensions		Identification	Mineral Class				1 = y	es, blank	= no
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A	45-3	ND																		
	K5-3	M				Puss	2 93	~60%	anhul	5	-10% AL	nu								
	H5-3	MD					16													
	653	M					115	2/13/12	·											
B	63-4	ND				/														
	F3-4	MD		b							·									
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Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmentál, Inc.
Instrument	JEOL 100 CX (N)(S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyce	

R+R
A
986
7/2/12
239995
891919

F-Factor Calculation (Indirect Preos	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volunte Applied to secondary filter (ml)	

Analyzed by	邓
Analysis date	7/13/12
Method (D=Oirect, I=Indirect, IA=Indirect, ashed)	ר ה
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Oate Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Oime	nsions	Identification	Mineral Class				1 = ye	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EOS
A	K4-3	M				Pus	\$ 50	% inhal	r	5-	10 / delon)		
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Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ QQ Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1t.}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# Asbestos structures}{Area Analyzed (mm^2)}$

GO = TEM grid opening



July 16, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 240072-1 None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #460 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 240072-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 240072-1

Client:

Client Project Number / P.O.:

R & R Environmental None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

July 13, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 14, 2012

Client ID Number	Lab ID No	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-071212 E	EM	892198	0.0900	902	ND	0.0047	BAS	BAS
3W-071212 N	EM	892199	0.0900	902	ND ND	0.0047	BAS	BAS
3W-071212 W	EM	892200	0.0900	902	ND	0.0047	BAS	BAS
3W-071212 S	EM	892201	0.0900	902	ND	0.0047	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

W.

DATA QA

TZ# 79861531 8225

Oue Date: 714 7.16

Due Time: 90m

RESERVOITS Environmental, Inc.. Seo i Logen St. Oenver, CO 80216 - Ph: 303 984-1988 - Fax 303-477-4275 - Toli Five :886 RESI-ENV

RES 240072

	INVOICE TO: (IF	DIF	FERE	ENT)					_					CON	TAC	T IN	ORM	ATION:				1 441
Company: Lt & Eunitonnandel	Compsny:					Con	ed: [Davi	V	05	rel	ex					Contact:					
Address: 47 W 9000 5 #2	Address:					Pho	10:										Ptena:					
Sondy, Ut. 84070					_		Fex: Fox:															
<u>'</u>	<u> </u>	Cel					Cell/pager: 80 (541-1035 Fittal Data Delaywable Email Addrese:						,	Coll/pag	w:							
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(Rush PCM = 2hr, TEM = 6hr.)	·					1	1					Į			D	ust =	D	P	aint = P			
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	turnarounda.**	Point Count	sduua. ∔	1		8	- 1		Orantification		1		antification NOTES	-	·· AcT	1 543		Other	media only**	}		
Organics 24 hr. 3 day 5 Day MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am • 6pm		ģ	Sign	1 1		Metals			Č	3	<u>ş</u>	8 _	S Z	⊢	ASII	VI 21/	as abb	oved wipe	media only	 		
	3-5 Day	友		4		8	- 1	11	2	s Ş	ig ,	鲁	일	- 1						 		
Salmonella, Listeria, E.coli, APC, Y & M48 Hr3-5 Day		Long report.	7402, SO-Ind	OSHA	يو	ing Fume,			‡	- 1	휼	Quantifica rantifica	ag O				-		ļ	 		
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apply for afferticurs, weehorkta and holidays.**		t g	કુ≊		류	- Anal TCLP,	X :	1 G	÷ å	4	ان	* *				a	وع					
Special Instructions:		Short report,	AHERA RETK, MI	7400A,	- Total,	الإي	S S	E.coli 0157:H7:	Ustaria; +/-	뱛	Ę	₹ Ş	+ K	-	ea vo	Code	<u>a</u>		_	EM Nu	niber (Lab	oratory
		5	* \f	;	ا <u>ج</u> ا	METALS RCRA 8,	ORGANICS - METH	ü	3 8	L S	ਲੋਂ ਹ	Y&M: +/-			(L) / Area	Matrix	Containers	Data collected	Time Collected		Use Only)	
Client sample ID number (Sample ID's must be unique)		ī	Sem	20	DUST	뿔운	ğ		VICR	ОВК	Loc	Y	- 38		<u>8</u> 3	₹	*	mm/dd/yy:	hh/mm s/p			
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Number of samples received: (Addition	al samples snail be listed on a	attac	hed lo	ng for	m.)			.11		اا												
NOTE: REI wip enalyzo mooming samples based upon information received and will not be re	sponsible for arrors or omissions in cal	lculati	ons resi	viting fr	om th	e biaccui	acy of	origina	dele.	Bys	igning	cheni	/compsny	nspres	entativo	85755	s that ev	bmission of	the following say	mplas for re	guested	
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	Fed Ex			Date	/Tim	e: 7	12	12							Sam	ple (Conditi	an: C	n Ice S	ealed	_Intact	- 1
Laboratory Use Only Received By: Date	/Time: 7./3	9	an	1		Carrier:	7	4	-	7	2 人	D			Tem	ıp. (F	°)	Yo	es/No Y	es / No	Yes No	;
Results: Contact Dave Phone Email Fax Dale	4 .4		-				P	ione	ElTE	منعر ail F	ax			Da	te =	710	-17	Tim	235.	Initia	ıls	ば
Contact Phone Email Fax Date	Time Initia	ls	Co	ntact				hone						Da				Time		Initia	ıls ú	7

Attachment I

Key to Count Sheets Count Sheets **Analytical Procedures**

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type Structure Types A = AmositeF = FiberAn = AnthophylliteB = BundleC = ChrysotileC = ClusterCr = Crocidolite

= Tremolite

ND = no structures detected

= other structure associated with a matrix

M = Matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

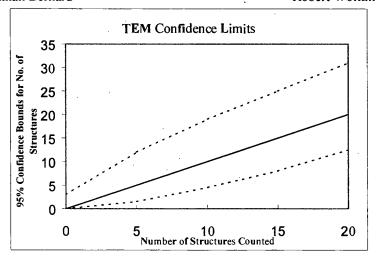
Sizing Conversion 1 length unit = 5 mm on screen = 0.278 micron1.80 length units = 0.5 micron 18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard

Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S))
Voltage (KV)	100 KV
Magnification	20KX) 10KX
Grid openina area (mm2)	0,010
Scaie: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	902
Date received by lab	7/13/12
Lab Job Number:	24072
Lab Sample Numben	892198

Analyzed by	-1/L
Analysis date	7/14/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	Ð
Counting rules (ISO, AHERA, ASTM)	AH-
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Stmcture	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
Ond	Ond Operang	Туре	Primary	Total	Length	Width	identification	Amphiboie	c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	44-6	M												
,	174-6	W			Pre	A	822	ntacs 5	2	lebra	,			
	PU-6	M			, I									
	EN1-6	M			Pne	r C	~600	what 5	80	borz				<u>. </u>
	64-6	M												
3	A4-3	M				- -								
	F4-3	M												
	843	NO					·							
	63-4	M												
		_												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count.

Laboratory name:	Resivoirs Environmental, Inc.
Instrument	JEOL 100 CX (N) (S))
Voltage (KV)	100 KV
Magnification	20KX) 10KX
Grid openina area (mri2)	0.010
Scale: 1L =	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client:	R+R
Sample Tyce (A=Air, D=Dust):	I. A
Air volume (L) or dust area (cm2)	902
Date received by lab	7/13/12
Lab Job Number:	240072
Lab Sample Number:	892199

F-Faclor Calculation (Indirect Preps Only):									
Fraction of primary filter used									
Total Resuspension Volume (ml)									
Volume Applied to secondary fitter (ml)	·								

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Analyzed by	-1/2
Analysis date	7/14/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH.
Grid storage location	Month Analyzed
Scops Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Structures		No. of Structures		Dimensions		Dimensions Identification Mineral Class				Identification		1 = yes, blank = no		
0110	Grid Operarig	Туре	Primary	Total	Length	Width	identinjcapon	Amphibole	С_	NAM	Sketch/Comments	Sketch	Photo	EDS			
A	E43	M												<u></u>			
	CU-3	NO			h	es I	1 70%	inters c	>	leb.	<b>3</b>						
	134-3	3															
	63-3	M															
	C3-3	NO			Pro	B	~608	infact o	82	lebr							
B	05-1	3															
	F33	Mo						·									
	933	M					•						·				
	EUM	M															
														i			

# Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instmment	JEOL 100 CX (N) (S))
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid openina area (mm2)	0.010
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dust):	H
Air volume (L) or dust area (cm2)	902
Date received by lab	7/13/12
Lab Job Number	240072
Lab Sample Number	892100

Fraction of primary filter used	
Total Resuspension Volume (ml)	_
Volume Applied to secondary filter (mi)	-

Analyzed by	-1/L
Analysis date	7/14/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	A
Counting mles (ISO, AHERA, ASTM)	AH-
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Grid Opening	inening -	No. of St	No. of Structures		Dimensions		Mineral Class			1 = yes, blank = no		
Ç.II		Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	C4-1	M												
	B4-1	M			Pre	p d	SOBW	bur 5	Ede	6,0				
	(5-1	M												
	B5-1	ND			2	r B	60tin	mes 58	dob	26				
	B4-3	M			8						·			
B	G5-1	M		,										
	F5-1	M												
	65-1	M						·						
	94-6	M												
							,							

#### Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	Resrvoirs Environmental, Inc.
Instmment	JEOL 100 CX (N) (S))
Voltage (KV)	100 KV
Magnification	20KX) 10KX
Grid openino area (mm2)	9
Scale: 1L=	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

THIN TIDOUCUU COUC	
Client :	R+12
Samole Tvoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	902
Date received by lab	7/13/12
Lab Job Number:	240072
Lab Sample Number:	89240

Analyzed by	-1/2
Analysis date	7/14/12
Method (D=Direct, I=Indirect, IA=IndIrect, ashed)	D
Counting miles (ISO, AHERA, ASTM)	AH-
Grid storage location	Month Analyzed
Scope Alignment	Oate Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (mf)	

Grid	Grid Opening	Stmcture	No. of Str	nctures	ctures Dimensions		Identification	Mineral Class				1 = yes, blank = no		
Ų <u>.</u>		Туре	Primary	Total	Length	Width	identification	Amphibola	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	441	MD										·		
	pul1	MD			Pres	A -	Tel into	1581	Sono					
	646	M						:						
	FUL	M			By	es L	A							
	84-6	M												
B	F4-1	M												
	84-1	M												
	F3-4	M											·	
	E34	MO												

# Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

**B**undle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration,  $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{\text{1000cc}}$ 

Filter loading, s/mm² = # Asbestos stmctures Area Analyzed (mm²)

GO = TEM grid opening